United States General Accounting Office

GAO

Report to the Chairman, Subcommittee on Environment, Energy and Natural Resources, Committee on Government Operations
House of Representatives

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July 1986

MINING VIOLATIONS

Interior Needs Management Control Over Automation Effort

GAO/IMTEC-86-27

GAO

United States
General Accounting Office
Washington, D.C. 20548

Information Management and
Technology Division

B-223487

July 28, 1986

The Honorable Mike Synar
Chairman, Subcommittee on Environment,
Energy, and Natural Resources
Committee on Government Operations
House of Representatives

Dear Mr. Chairman:

This report responds to your November 18, 1985, letter (see appendix I) requesting our review of various aspects of the Department of the Interior's Office of Surface Mining's effort to revise its automated Collection Management Information System. The following briefly summarizes the work you asked us to undertake and the results of that work:

- Ascertain the Office's rationale for revising the collection system including the quality of studies to justify revision

  The Office did not adequately justify its rationale for revising the collection system. The required studies to justify revision were not properly performed, and the Office's rationale for revising the system was questionable.

- Assess whether the Office complied with applicable federal procurement regulations in awarding the contract and evaluating contractor proposals to do the revision

  The contract to revise the system was not subject to federal procurement regulations because it was awarded to a firm under the authority of section 8(a) of the Small Business Act. In evaluating contractor proposals, the Office did apply criteria that federal agencies normally use. However, it did not document the results of the evaluation and selection process used in making its final selection.

- Evaluate the quality of the test that the Office performed to determine the accuracy of the data in the system's data base and the quality of the Office's plans for ensuring data accuracy and providing trained staff to update and maintain the data

  Questions remain about the accuracy of the system's data base because the Office's quality assurance test was not statistically valid and its

approach for ensuring data accuracy and providing trained staff to update and maintain the data was not finalized as of June 20, 1986.

- Evaluate the ability of the revised system to track cases through the case resolution process and generate management reports

We could not determine the system's ability to track cases and generate reports because the revised system was not operational and documentation on its design was not finalized as of May 31, 1986.

We are providing recommendations on actions that Interior can take to ensure that the revised system will be an effective tool for helping the Office carry out its responsibilities under the Surface Mining Control and Reclamation Act of 1977, (30 U.S.C. 1201-1328).

The Collection Management System

The Congress enacted the Surface Mining Act in an effort to impose workable reclamation standards nationwide and to prevent unnecessary degradation of land and water resources. The act, which establishes general performance standards applicable to all surface coal mining and reclamation operations, is principally enforced through the issuance of notices of violation and cessation orders to coal operators who do not comply with the act and its implementing regulations. Operators who violate the standards established by the act can receive a monetary civil penalty. Since 1978, the Office has closed 14,767 violation cases and has collected about $9 million in penalties. As of May 1986, the Office was tracking 9,533 active violation cases on which $161 million in penalties were due.

To help account for assessment and collection actions on violation cases, the Office implemented an automated Collection Management Information System in 1983. According to the contractor who designed the system, the system could track individual civil penalty violations through the Office's assessment and collection process from the point when a notice of violation or cessation order was received until final disposition of the case. In addition, the system contained information on penalties due and amounts collected and was capable of generating financial and operational reports providing information on the status of violation cases. By September 1985, the Office concluded that the system was not usable for tracking cases and needed to be revised. According to users of the system, the system did not have accurate data, all violation cases were not entered into the system, and system-produced reports were not accurate or complete. On September 13, 1985,

the Office requested departmental approval to hire a contractor to move the collection system to a new data base management system[1] and to implement improvements to the collection system over a 3-year period.

On September 30, 1985, a $2 million contract was awarded to implement enhancements to the collection system. Tasks to be performed by the contractor included: (1) converting the existing data base management system to another system, (2) developing a set of input edit routines to ensure the accuracy of data entered into the system, (3) verifying the accuracy of information on 15,000 cases entered into the system before October 1, 1985, and (4) entering a backlog of about 7,000 violation cases that had not been entered into the system as of October 1, 1985. By January 1986, the Office had spent the $2 million authorized for the contract and had requested an additional $2.4 million for the first year of the contract to cover cost overruns and additional tasks that it believed were necessary to make the system an effective tool for managing cases.

At the time we completed our field work in May 1986, the contractor revising the system had completed tasks related to verifying the accuracy of information on 15,000 cases entered into the system before October 1, 1985, and had entered the backlog. Among the tasks remaining to be completed were the development of a set of edit routines to improve the accuracy of data entered into the system and the conversion of the Office's violation case data from one data base management system to another data base management system. All tasks are scheduled to be completed by September 26, 1986.

The Office Did Not Adequately Justify Revising the System

To save time, the Office did not submit two of the four studies and analyses required by Interior to justify revision of the system; the other two were submitted but did not meet Interior's requirements. The Office justified the revision on the basis that: (1) the data base management system used in managing assessment and collection activities needed to be changed to another with features to improve the processing of information, (2) over 50 percent of the information in the system's data base was incorrect because the system did not have needed input edits to ensure the accuracy of information as it was entered, and (3) the system was only partially automated and a substantial amount of manual resources was required to verify the accuracy of reports produced by

[1]A data base management system is a set of computer programs that can facilitate the management, manipulation, and control of data.

the system. Interior's Office of Information Resources Management did not conduct a detailed review of the Office's justification because it said that it had insufficient staff. We could not fully substantiate the three reasons the Office gave for justifying the revision.

Interior's Justification Procedures Were Not Followed

Interior bureaus and offices requesting approval to acquire computer services costing over $200,000 a year are required to follow a set of disciplined procedures to justify the procurement and to ensure that user needs are met at the lowest overall cost.[2]

We reviewed the Office's request and found that the required studies and analyses either were not submitted or did not meet Interior's requirements. For example, neither a requirements analysis, describing the objectives to be met, nor a software conversion study, describing the problems associated with the current system and the cost and benefits of converting the software to a new data base management system, was submitted. The project officer provided us with documents that he believed met the key features of Interior's procedural requirements for requirements analyses and feasibility studies.

We reviewed the documents and concluded that they did not meet Interior's requirements. For example, the documents did not contain information on the operational and economic feasibility of alternative solutions. The documentation addressing workload estimates did not include a required yearly forecast of the workload to be processed over the life of the system. The economic analysis, which is supposed to address the cost and benefits of alternative approaches, did not include any analysis addressing the cost and benefits of alternative approaches or an explanation of how the approach selected would meet the users' needs at the lowest overall cost over the system's life. The document provided to us by the project officer showed only the cost of operating the system before revision.

We asked the project officer why the studies and analyses either had not been submitted or did not include all of the required information. He stated that Interior's procedural requirements were not followed due to time constraints; the Office had made a commitment at a March 1985 hearing before the House Subcommittee on Environment, Energy, and Natural Resources to have the system functional by December 31, 1985.

[2]Departmental Manual (pt. 306, secs. 4.4 and 4.5).

Interior's Office of Information Resources Management is responsible for reviewing and approving agency and bureau automated data processing procurements. In approving the Office's request without the required studies and analyses justifying the procurement, the Office of Information Resources Management deviated from departmental requirements. The official who reviewed the request told us that the Department's requirements were not enforced. The Office of Information Resources Management generally relaxes policies and procedures for requests under $10 million, according to the official, since the office does not have sufficient staff to do detailed reviews on procurements of this size.

The Office's Rationale for Revising the System Is Questionable

The Office's claim that the data base management system needed to be changed is questionable. In support of its claim, the Office provided us with an Interior Department draft study describing the advantages and disadvantages of the old and new data base management systems. According to the study, the most serious disadvantage with the prior data base management system was its lack of report-writing capability. The study also noted that an optional report-writing feature was available for about $15,000.

The study also listed some advantages of the new data base management system. These included (1) the ability to handle records of variable format and length, (2) rapid and easy access to records by multiple users, (3) the ability to query and search multiple files, (4) easy backup and recovery routines, and (5) the ability to generate reports without using a special report-writing option. We compared the stated benefits of the new data base management system to the capabilities of the prior system and found that, with the exception of the report-writing feature, both systems have the same general capabilities.

To justify a new data base management system, the Office would need a detailed analysis of the collection system's requirements. Such an analysis would include a description of the current system, including the system's objectives, outputs (such as reports) and inputs; update frequency of information in the system's data base; volume and type of queries; and a diagram of the data in the data base showing the relationships among the various pieces of data. A software conversion study comparing these requirements to limitations in the capabilities of the old data base management system would also be required to substantiate the need to change the data base management system. Such information

would have been available had the Office conducted the detailed studies and analyses required by Interior.

Input edits are a fundamental and generally accepted internal control in automated systems to improve the accuracy of information entered into the system. The Office stated that the lack of input edits allowed over 50 percent of the information to be entered incorrectly into the system's data base. We confirmed that the old collection system did not have input edits. According to the contractor who had developed the system, these edits were not included because the Office had not established such requirements in the contract. According to the contractor, the Office had not established input controls because it did not want to exceed the funding level authorized for the project. The project officer said that the Office did not have the expertise to recognize the need for such edits. The development of these edits, however, did not require a new data base management system because the edits could have been added to the old system.

The Office could not substantiate its claim that the old collection system was only partially automated because it did not prepare documentation showing how it had reached this conclusion. We could not substantiate the Office's claim that the system was only partially automated because the Office had never prepared documentation describing how the old collection system functioned. The Office's project officer said that, based on his personal observations, he considered the old collection system partially automated because it did not have certain features he believed were necessary. For example, it did not have checkpoint restart procedures;[3] could not add columns of numbers in certain reports; and did not have input edits, which could help ensure the accuracy of information entered into the system. He said that the Office had not documented how these technical limitations were adversely affecting the Office's ability to manage violation cases. Our review of the technical capabilities of the old data base management system that supported the collection system showed it had checkpoint restart procedures and the capability to add columns of numbers if programmed to do so. We confirmed that the collection system did not have input edits.

With respect to the need for a substantial amount of manual effort to support the system, the Office's project officer said that, between April and September 1985, 21 staff members—nearly all of the staff of the

[3]Checkpoint restart procedures make it possible, in the event of an error or interruption, to continue processing from the last checkpoint rather than from the beginning of the run.

Office's Assessment and Collection Division—were needed to verify information in the system's data base used in producing a series of court-ordered reports on unabated violations. According to the project officer, over $500,000 in labor costs were incurred in the effort.

Effects of Project Mismanagement

GAO has found in the past that not preparing studies and analyses such as those required by the Department has led to problems. These problems include millions of dollars spent for systems that did not meet user needs, were not cost-effective, experienced cost overruns, were costly to maintain, or simply did not work.[4] The Office has begun to experience the effects of not preparing the required studies and analyses. Although $2 million was approved for the project over a system life of 3 years beginning in October 1985, contractor invoices and projections show that through January 31, 1986, about $2.8 million had been spent. Consequently, the Office requested an additional $2.4 million to cover cost overruns and the cost of tasks added after the contract was awarded. In a January 28, 1986, memorandum to Interior, the Office stated that it had underestimated the time and resources needed to verify data in the system by 100 percent. The Office also said that it had identified six additional tasks costing $900,000 that had to be added to the contract to ensure that the system contained the data needed to meet present and future requirements.

On February 13, 1986, Interior notified the Office that, because of documentation and planning problems that the Office was having in its effort to revise the collection system, Interior was approving only $950,000 of the $2.4 million requested—$400,000 to cover cost overruns and $550,000 to continue the contract through March 1986. Interior also informed the Office that expenditures for subsequent months would only be approved if the Office awarded a contract for project oversight that met with departmental approval. Accordingly, the Office awarded a contract on March 7, 1986, for $800,000 that, among other things, provides for monitoring the development and operation of the collection system and other automated systems being developed by the Office. The contractor's tasks include assessing progress, problems, and plans in developing systems, and recommending corrective actions and enhancements. On March 20, 1986, Interior approved the remaining $1.45 million requested by the Office to continue the contract for revising the

[4]Software Projects: Army Material Command Spent Millions Without Knowing Total Costs and Benefits (IMTEC-86-18, June 20, 1986), The Treasury Department and Its Bureaus Can Better Plan For and Control Computer Resources (GGD-82-9, Feb. 22, 1982).

collection system through September 1986. The Office's project officer said that additional funds will be needed to cover contract costs expected to be incurred during fiscal years 1987 and 1988.

Contract Award Was Not Subject to Federal Procurement Laws and Regulations

The contract to revise the Collection Management Information System was not subject to general federal procurement laws and regulations because it was awarded to a small business firm under the authority of section 8(a) of the Small Business Act, (15 U.S.C. 637(a)). Although the Office had documented the use of criteria normally used by federal agencies in evaluating contractor proposals in the first round of evaluations, it did not document the results of its evaluation and selection process in the second round.

The section 8(a) program implements a congressional mandate that small socially and economically disadvantaged businesses be given the opportunity to participate in the award and performance of government contracts. To accomplish this purpose, section 8(a) vests broad discretion in the Small Business Administration and procuring agencies, allowing them to award such contracts to eligible firms on conditions and terms as deemed appropriate. Contracts can be awarded either on a competitive or noncompetitive (sole-source) basis. Because of the broad discretion allowed in awarding section 8(a) contracts, GAO has consistently held that the award of such contracts is not subject to the general federal procurement laws and regulations.[5]

Instead, the applicable regulations and procedures for section 8(a) procurements are found in 48 C.F.R. Part 19 and the Small Business Administration's Standard Operating Procedures. These regulations and procedures, which also reflect the discretionary nature of section 8(a) procurements, are silent on exactly how a procuring agency and the Small Business Administration are to award section 8(a) contracts. The applicable regulations and procedures are also silent on how the proposals are to be evaluated when selecting a contractor.

In evaluating competing vendor proposals for the contract to revise the collection system, the Office conducted two rounds of evaluations. In the first round, proposals were solicited from five vendors identified by the Office as eligible for the section 8(a) program. The Office evaluated proposals and selected a vendor. The Office notified the Small Business

[5]Arawak Consulting Corporation, 59 Comp. Gen. 522 (1980), 80-1 CPD 404.

Administration of its selection and requested permission to begin contract negotiations. The Administration, however, informed the Office that the vendor selected was not eligible to perform the type of work that the Office wanted done because the vendor's annual gross revenue exceeded the limits for computer-oriented operation and maintenance contracts. The Administration also disqualified, on the same grounds, two other vendors whose proposals had been evaluated by the Office in the first round. As a result, the Office had to conduct a second round of evaluations. In the second round, three different vendors were evaluated, and an eligible contractor was selected.

The Office's evaluating officials said that the same five ranking criteria were used in both rounds in evaluating vendor proposals. The criteria focused on the contractor's knowledge of financial accounting systems, the contractor's knowledge of the two data base management software packages that the system would be using, the accounting and data-processing skills of key contractor personnel, the contractor's experience in managing large data bases, and the contractor's experience in validating data bases. We found that these criteria embody evaluation factors that agencies normally use in federal procurements. According to the Federal Acquisition Regulation, the evaluation criteria that may be applied in evaluating proposals include management capability, personnel qualifications, experience, and past performance.

The Office retained documentation for the first round of evaluations showing how each panel member rated each vendor on the five ranking factors. The only documentation for the second round, however, consisted of a memorandum prepared by the Office's contracting officer showing how each panel member had ranked each of the three vendors on a scale from one to three. We could not verify that the ranking criteria had been used by the Office in the second round of evaluations because the Office could not provide documentation showing that they had been used or how they had been applied. All three members on the second panel told us that they had evaluated vendor proposals using the same ranking criteria that had been used in the first round of evaluations.

Questions Remain About the Accuracy of Collection System Data

The accuracy of the data contained in the collection system is important to ensure the system's effectiveness as a tool for managing collection and assessment cases. Although the Office conducted a quality assurance test of the contractor's efforts to correct information in the data base, there is no assurance that the system's revised data base is accurate because the methodology used by the Office in the test was flawed. In addition, plans for assuring data quality in the revised system have not been finalized.

Methodology Used to Determine Data Quality Not Statistically Valid

Between December 2, 1985, and January 17, 1986, the Office conducted a test to determine the quality of the contractor's work in verifying the accuracy of information for the 15,000 cases entered into the system's data base prior to October 1, 1985. Once each week during the test period, a list was prepared of all cases that the contractor had corrected the previous week. For a total of 1,110 sample cases, the Office compared the information from the corrected data base with the information contained in the case files. Discrepancies between the information in the case files and the information in the data base were identified, and the data base corrected, if necessary.

In January 1986, the Office's test manager reported to the Office's project officer that 100, or 9 percent, of the 1,110 sample cases examined were found to contain one or more errors. The test manager also reported that 123, or 0.26 percent, of the estimated 46,600 data elements in the 1,110 cases were found to be incorrect. The Office considered the error rates to be acceptable and used them to conclude that the universe of over 22,000 cases in the revised collection system's data base had an error rate of less than 1 percent.

The Office did not use a statistically valid methodology in performing its test to assess the accuracy of information in the collection system data base because it had not included all violation cases in the universe from which samples were selected and it had not selected cases randomly. As a result, the test results apply only to the 1,110 sample cases and cannot be used to project the accuracy of data in the system's data base.

To select a sample for the purpose of projecting test results to an entire universe, the tester must take steps to ensure that (1) all cases in the universe have an equal chance of being selected and (2) cases selected for testing are selected randomly. In performing its quality assurance test, the Office test manager told us that the Office selected sample cases from the approximately 15,000 cases entered into the system's

data base before October 1, 1985, and did not include about 7,000 backlogged cases that were entered by the contractor into the data base after October 1, 1985. Therefore, since 7,000 cases or 32 percent were not considered, there is no valid basis for projecting test results to all of the approximately 22,000 cases in the data base. The test manager also said that, in selecting cases for testing, he attempted to use a statistically valid random sample but ran into problems because case files were not always available for the cases selected. Therefore, to avoid delays, he decided to select cases based on the availability of case files. This selection process biased the selection of cases since it eliminated some cases from the original sample.

Plans for Assuring Data Quality Not Finalized

According to the contractor who had originally developed the collection system, the Office did not train sufficient numbers of staff to enter data into the system or use the system. This lack of training contributed to the data base's high error rate. In addition, the contractor said that the system did not have edit routines to ensure the validity of data as it was entered into the system.

The Office proposes to maintain data accuracy in the revised system by: (1) developing a series of edit routines to test the validity of data as it is entered into the data base; (2) requiring the contractor revising the system to conduct monthly quality assurance tests on 5 percent of the data base's cases; and (3) developing a training program for about 20 staff members from the Office's Assessment Branch, Collection Branch, Compliance Branch, and Interior's Solicitor's Office in how to use and maintain the system. As of June 20, 1986, the Office had not completed development of a series of edit routines. The Office planned to complete the edit routines in July 1986. The Office's project officer said that a methodology to be used by the contractor in conducting monthly quality assurance tests had been developed, but the methodology did not use a statistically valid sampling technique to select cases for review. He estimated that it would take about 20 months for the Office to verify the accuracy of data in the data base using the methodology that had been developed. The project officer also said that the Office had developed a training program but had not yet trained staff in how to enter data into the system.

System's Ability to Track Cases and Generate Reports Not Yet Measurable

Because the system was not operational and documentation on its design was not finalized at the time we completed our field work in May 1986, we could not assess the system's ability to track cases through the assessment and collection process and generate management reports. The Office was also working on designing and implementing revisions to its collection system. For example, the Office was in the process of preparing documentation (1) listing the items of information to be maintained in the system's data base, (2) describing the data relationships, (3) describing computer programs that would be used in entering and accessing information in the data base and each program's function, and (4) describing the reports to be generated and the procedures for producing those reports.

Conclusions

The project to revise the Office of Surface Mining's collection system has been adversely affected by a breakdown of management controls at both the Office and departmental levels. The Office did not adequately justify revising the system. Although the Office was experiencing operational problems with its prior collection management information system, these problems were due to the Office's inability to successfully implement the system. It is highly questionable whether a new data base management system was needed to solve these problems. Furthermore, because the Office did not prepare a requirements analysis, a software conversion study, workload estimates, and an economic analysis that conformed to the procedural requirements in the Departmental Manual, it is questionable whether the efforts being made to revise the collection system will result in the development of an effective system for managing the Office's assessment and collection cases. Interior's management controls over the approval process also were not exercised. The Office's justification was not reviewed because of relaxed implementation of departmental policy. Such relaxed implementation may also be occurring for other projects under $10 million.

Although the Office has invested many months of work and over $2 million, questions remain concerning the accuracy of the collection system's data base. The Office did not follow a statistically valid approach in conducting a quality assurance test on the accuracy of information in the system's data base and has not completed its proposed initiatives for assuring data accuracy. Therefore, the Office cannot assure the Congress or the system's intended users that the data base contains accurate and complete data on the status of assessment and collection cases or that accuracy will be achieved in the future.

The Office has begun to experience the effects of mismanaging the revision effort. The $2 million approved for the system over a 3-year period was spent in 4 months. An additional $2.4 million was approved to cover the remaining first year costs. Furthermore, a contractor had to be brought in by Interior to monitor the revision effort. An undetermined amount of additional funds will be required to cover costs incurred by the contractor performing the revision effort during fiscal years 1987 and 1988.

Recommendations

To ensure that appropriate management controls are established over the effort to develop and implement a Collection Management Information System, the Secretary of the Interior should not provide further funding for the contract to revise the system until the Office has prepared a requirements analysis, a software conversion study, a workload estimate, and an economic cost analysis that conform to the requirements in Part 306 of the Departmental Manual. The Secretary should also direct the Office of Surface Mining's Director to (1) conduct another quality assurance test using statistically valid random sampling techniques, (2) develop a statistically valid methodology for use in conducting monthly quality assurance tests on a sample of the data base's cases, and (3) develop within the Office the capability needed to successfully develop and operate the collection system.

In view of the possibility that review requirements are not being followed for other procurements under $10 million, the Secretary should direct the Office of Information Resources Management's Director to establish management controls over the acquisition of computer services under $10 million to ensure that such acquisitions are justified and properly managed.

In conducting our review, we reviewed documentation and procurement rules and regulations, examined files, and interviewed officials from the Department of the Interior, the Small Business Administration, the contractor who developed the collection system in 1983, the contractor revising the collection system, the contractor providing oversight on the effort to revise the system, and the U.S. Geological Survey. We performed our field work from December 1985 to May 1986. Appendix II contains details on the objectives, scope, and methodology followed in conducting this review.

As you requested, we did not obtain agency comments on the conclusions and recommendations in this report. We did, however, discuss the facts with agency program officials and have included their comments where appropriate. Except as noted above, we performed our work in accordance with generally accepted government auditing standards.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after its issue date. We will then send copies to the appropriate House and Senate Committees; Secretary of the Interior; Director, Office of Surface Mining; Director, Office of Information Resources Management; Director, Office of Management and Budget; and other interested parties.

Sincerely yours,

Warren G. Reed
Director

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Request Letter

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MAJORITY—225-6427
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NINETY-NINTH CONGRESS

Congress of the United States

House of Representatives

ENVIRONMENT, ENERGY, AND NATURAL RESOURCES
SUBCOMMITTEE
OF THE
COMMITTEE ON GOVERNMENT OPERATIONS
RAYBURN HOUSE OFFICE BUILDING, ROOM B-371-B-C
WASHINGTON, DC 20515

November 18, 1985

Honorable Charles A. Bowsher
Comptroller General
General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Bowsher:

The Subcommittee on Environment, Energy and Natural Resources is greatly concerned over efforts by the Department of the Interior's Office of Surface Mining (OSM) to develop and operate automated systems to assist in carrying out its responsibilities under the Surface Mining Control and Reclamation Act of 1977. These include the assessment and collection of civil penalties for violations of the law and assuring that permits to mine coal are not issued to operators with outstanding violations.

In a 1984 investigation we found that OSM's automated Collection Management Information System (CMIS), designed to track violation assessments and collection efforts, was underutilized, did not contain information regarding all cases and sometimes contained information inconsistent with case files.

Recently, the Subcommittee learned that, after 4 years of effort, OSM has dismissed the contractor responsible for implementing CMIS and has employed a new contractor to revise the system. The Subcommittee successfully used reports from CMIS in the past to identify problems at OSM and believes that, although the system is not perfect, such reports are valuable to the administration of the program. We are concerned that the system as revised, will limit OSM's ability to generate reports needed to insure prompt and effective processing of cases in accordance with existing regulations and guidelines.

In July, 1985 we reported that OSM had not followed our 1984 recommendation for establishing a real-time system for identifying, matching and providing to the states and other government entities information regarding coal operators who have outstanding violations and owe civil penalties. Currently an Applicant Violator System (AVS) is being developed by OSM in response to a Federal court

order so it will be able to match Federal mining violations with applications for mining permits. The court order does not require AVS to include other information, such as information on state violations and penalties (which constitute up to 90 percent of total violations), uncollected abandoned mine land fund fees, and violators of other Federal statutes.

In view of the Subcommittee's continued interst in this area and our commitment to review OSM's progress in eliminating problems in the surface mining program (including the likelihood of further hearings in March 1986), I am requesting that GAO's Information Management and Technology Division (IMTEC) review the circumstances surrounding the revision of CMIS. The review should include (1) ascertaining the rationale for revising the CMIS, including an evaluation of the quality of cost effectiveness and feasibility studies performed to justify revision, (2) an evaluation of the ability of the revised system to track cases through the case resolution process (3) an evaluation of the revised system design to determine its capability to provide Interior and Congress with reports, which can be used to evaluate OSM's effectiveness in implementing the Act, (4) an assessment of the methodology used to evaluate proposals in selecting a new contractor, and (5) an assessment as to whether OSM complied with Federal procurement regulations in awarding the contract.

In addition, I am requesting that GAO have IMTEC review the proposed AVS development, with a report to be made at a mutually agreeable time, subsequent to the report on CMIS. GAO's examination should address the adequacy of the Department's efforts to develop AVS to fully implement the requirements of Section 510 of SMCRA. Section 510(c) provides that permits to mine coal are not to be issued to operators owned or controlled by an applicant currently in violation of the Surface Mining Act, or with outstanding Federal air and water quality violations. The review should include an evaluation of the proposed system's technical specifications, such as ascertaining whether the system (as intended to be designed) will insure the completeness, accuracy and timeliness of data to be contained in the system. Among the questions to be addressed is the capability of the system currently under development to incorporate information regarding violations issued by state regulatory agencies, and when such a system will be workable.

I would greatly appreciate GAO staff briefing the Subcommittee staff on a continuing basis regarding the progress of its work. In addition, in accordance with the Committee's general policy regarding reports submitted to the Committee, should this review result in a full report or other written document, GAO should not

solicit Department comments. In addition, conclusions and recommendations should not be discussed with the Department although it would be appropriate to consult with the Department to make certain that the facts are correct.

If you have any questions regarding this request, please contact Kathryn Seddon, Counsel to the Subcommittee, at 225-6427.

Sincerely,

Mike

MIKE SYNAR
Chairman

Objectives, Scope, and Methodology

In his November 18, 1985, letter, and in subsequent discussions with our office, the Chairman of the Environment, Energy, and Natural Resources Subcommittee of the House Committee on Government Operations, asked that we review the circumstances surrounding Interior's Office of Surface Mining's revision to its automated Collection Management Information System. Specifically, the Chairman asked that we

- ascertain the Office's rationale for revising the collection system, including an evaluation of the quality of cost effectiveness and feasibility studies performed to justify the revision;
- assess whether the Office complied with applicable federal procurement regulations in awarding the contract and the methodology used to evaluate proposals in selecting a contractor to do the revision;
- evaluate the quality of the test the Office performed to determine the accuracy of the system's data base, and the quality of the Office's plans for ensuring data accuracy and providing trained staff to update and maintain the data; and
- evaluate the ability of the revised system to track cases through the case resolution process and produce reports that could be used to evaluate the Office's effectiveness in implementing the Surface Mining Act.

We performed our field work in Washington, D.C., from December 1985 to May 1986 at the Department of the Interior headquarters, the Department's Office of Surface Mining, the Small Business Administration's District Office, the office of the contractor who was revising the system, and the office of the contractor who had developed the system in 1983. In addition, we interviewed the project manager for the contractor hired to provide project oversight on the effort to revise the collection system and the U.S. Geological Survey official who provides support in maintaining the system.

To ascertain the Office's rationale for revising the system, we reviewed its procurement request justifying the need to acquire computer services to revise the system. We also interviewed responsible agency officials, users of the system, and the contractor who had developed the system and obtained their views on the operational status of the system and the need for revision. To compare the technical capabilities of the old and new data base management systems, we reviewed published industry assessments of the two systems.

To determine whether the Office followed departmental procurement procedures and to evaluate the quality of cost effectiveness and feasibility studies performed, we reviewed documentation submitted by the

Office to the Department and compared it with Interior's requirements applicable to automated data processing procurements. We also discussed Interior's policies and procedures with the official of the Department's Office of Information Resources Management who reviewed and approved the request.

To determine the Office's compliance with procurement laws and assess the methodology used in evaluating competing vendor proposals, we reviewed applicable rules and regulations related to 48 C.F.R. and the Small Business Administration's Standard Operating Procedures. Using the Office of Surface Mining and departmental procurement and contract files, we reviewed and documented the procedures used and the sequence of events that occurred in awarding the contract to revise the system.

To evaluate the quality of the Office's test to determine the accuracy of the data in the system, we interviewed responsible officials of the Office of Surface Mining's Information Systems Management staff who performed the quality assurance test of the data in the system's data base. We reviewed the results of the Office's test and compared the appropriateness of the methodology used with generally accepted statistical sampling procedures. In assessing the Office's plans for maintaining the accuracy of data in the system and for providing trained staff to use the system, we interviewed responsible officials in the Office's Information Systems Management staff.

To evaluate the ability of the revised system to track cases and generate reports, we determined the status of the revision effort by interviewing responsible agency officials and reviewing documentation on the revision effort, such as progress reports submitted by the contractor hired to revise the system and minutes of meetings held between Office of Surface Mining officials and the contractor.

We discussed our facts with agency program officials and have included their comments where appropriate. However, in accordance with the requester's wishes, we did not obtain the views of responsible officials on our conclusions and recommendations; nor did we obtain the views of responsible officials on a draft of this report. Except as noted above, we performed our work in accordance with generally accepted government auditing standards.

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